

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-VI (NEW) EXAMINATION – WINTER 2020****Subject Code:2161902****Date:22/01/2021****Subject Name:Internal Combustion Engines****Time:02:00 PM TO 04:00 PM****Total Marks: 56****Instructions:**

1. Attempt any **FOUR** questions out of **EIGHT** questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

	MARKS
Q.1 (a) Define (1) Compression ratio (2) Cut off ratio (3) Air fuel ratio	03
(b) Draw port timing diagram for two stroke petrol engine.	04
(c) Explain different kind of loss in actual fuel cycle compare to air standard cycle.	07
Q.2 (a) Define (1) HCV (2) LCV (3) Adiabatic flame temperature	03
(b) Derive stoichiometry air fuel ratio for octane as gasoline fuel	04
(c) Explain different components used in MPFI engine.	07
Q.3 (a) Write down difference between supercharging and turbocharging.	03
(b) List the different compensating devices used in modern carburetor and explain any one in detail.	04
(c) Derive the equation of exact air fuel ratio for single jet carburetor.	07
Q.4 (a) Define (1) Firing order (2) Quality governing (3) Quantity governing.	03
(b) Explain heat and miss type governing system.	04
(c) Explain solex carburetor with neat figure.	07
Q.5 (a) Define (1) Auto ignition (2) Detonation (3) Pre-ignition	03
(b) Explain M. type combustion chamber.	04
(c) Explain combustion stages in CI engine.	07
Q.6 (a) Define (1) Ignition lag (2) Delay period (3) Octane number	03
(b) Explain any two methods to control the knocking tendency in SI engine.	04
(c) Explain thermo syphon cooling system with neat sketch.	07
Q.7 (a) Define (1) Thermal efficiency (2) Indicated power (3) Mechanical efficiency.	03
(b) Explain willan's line method for engine testing.	04
(c) Explain magneto ignition system with neat sketch.	07
Q.8 (a) Difference between Euro norms and Bharat stage norms.	03
(b) Draw the layout of diesel engine power plant.	04
(c) List the different method of turbocharging and explain pulse converting turbocharging method.	07
